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Amdt. Dated: September 30, 2004
Reply to Office Action of July 2, 2004

REMARKS/ARGUMENTS

Introduction

In accordance with the foregoing, claims 1-3, 6-16, and 18-24 have been amended. Claims 1-24 are pending in this application.

No new matter has been introduced in this amendment since all amendments are supported by the originally submitted specification, drawings, and claims.

Claims 6 and 7 have been objected to because of informalities. Claims 6 and 7 have been amended to be numbered consecutively.

Rejection under 35 USC §102

Claims 1-4 and 12 are rejected under 35 USC §102 as being anticipated by Inagaki et al., Japanese Patent Publication No. 04-140763 (Inagaki et al.). This rejection is respectfully traversed for at least the reasons stated below.

The Examiner asserted in a fourth paragraph on page 2 of the Office Action mailed on July 2, 2004, that Inagaki et al. teaches a plurality of paper feeding paths (38, 68) along which a printing paper is fed, a main feed roller (34a) along which the printing paper is conveyed to the image forming unit (12) of the image forming apparatus and wherein a plurality of paper feeding paths are disposed along an outer circumference of the main feed roller (Figure 1).

Claim 1 has been amended to recite a first, a second, and a third paper feeding paths disposed along an outer circumference of a main feed roller, and a main conveyance path disposed between an image forming unit and the first, second, and third paper feeding paths.

Although Inagaki et al. discloses two paper feeding paths (38, 68), Inagaki et al. fails to teach the Applicant's third paper feeding path disposed along the outer circumference of the main feed roller as presently recited.

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Since Inagaki et al. fails to disclose the Applicant's third paper feeding path disposed along the outer circumference of the main feed roller as now recited, it is respectfully submitted that claim 1 is patentably distinguishable from Inagaki et al. Therefore, claim is deemed to be allowable.

Regarding claim 2, the Examiner asserted that Inagaki et al. teaches a connecting conveyance path (40). However, Figure 1 of Inagaki et al. shows the path 40 disposed on the roller (34a) which is referred to as the main feed roller. In contrast, the Applicant's connecting conveyance path is formed between the main conveyance path and the outer circumference of the main feed roller as recited in claim 2. Since Inagaki et al. fails to disclose the Applicant's conveyance path as presently recited, it is respectfully submitted that claim 2 is patentably distinguishable from Inagaki et al. Thus, claim 2 is deemed to be allowable.

Regarding claims 3, the Examiner asserted that Inagaki et al. teaches a sub feed roller (34a). It appears that the Examiner refers to the roller (34a) of Inagaki et al. as corresponding to the Applicant's main feed roller and sub feed roller as recited in claims 1 and 3, respectively. Contrary to the assertion made by the Examiner, it is respectfully submitted that the roller (34a) of Inagaki et al. can not be disposed on the connecting conveyance path which is disposed between the main conveyance path and the roller (34a) itself.

Moreover, the Examiner fails to address the Applicant's sub feed roller disposed on the connecting conveyance path which is disposed between the main conveyance path and the outer circumference of the main feed roller.

Furthermore, Inagaki et al. does not show any roller between the roller (34a) and a path (24) to correspond to the Applicant's sub feed roller. Since Inagaki et al. fails to teach the Applicant's sub feed roller, it is respectfully submitted that claim 3 is patentably distinguishable from Inagaki et al. Thus, claim 3 is deemed to be allowable.

Regarding claim 4, the Examiner asserted that Inagaki et al. teaches a sub feed roller. However, Inagaki et al. neither shows the Applicant's sub feed roller disposed on the conveyance path between the main feed roller and the main conveyance path nor the Applicant's sub feed roller to adjust and align a position of the printing paper conveyed along the connecting conveyance path. Moreover, Inagaki et al. fails to show that the printing paper is

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adjusted and aligned when being conveyed along the connecting conveyance path. It is respectfully submitted that for at least the reason that Inagaki et al. fails to show the Applicant's sub feed roller, claim 4 is patentably distinguishable from Inagaki et al. Thus, claim 4 is deemed to be allowable.

Regarding claim 7, the Examiner asserted that Inagaki et al. teaches at least one pinch roller (34b). Claim 7 is renumbered as claim 6 and amended to define a pinch roller disposed on an outer circumference of the sub feed roller.

It is respectfully submitted that Inagaki et al. does not teach the Applicant's sub feed roller, and that the pinch roller (34b) of Inagaki et al. is not disposed on the Applicant's sub feed roller but on the main feed roller (34a). Therefore, it is respectfully submitted that for at least the reason that Inagaki et al. fails to teach the Applicant's pinch roller, claim 6 is patentably distinguishable from Inagaki et al. Thus, claim 6 is deemed to be allowable.

Regarding claim 12, the examiner asserted that Inagaki et al. teaches a returning conveyance path (56) along which the printing paper is returned to provide double-sided printing. Claim 12 has been amended to recite the first, second, and third paper feed paths disposed on a first, a second, and a third portions of the outer circumference of the main feed roller, respectively. Accordingly, it is respectfully submitted that Inagaki et al. does not teach the Applicant's third paper feed path and third portion of the outer circumference of the main feed roller as now recited in claim 12. Since claim 12 is patentably distinguishable from Inagaki et al., claim 12 is deemed to be allowable.

In view of the above points provided by the Applicant, withdrawal of the rejection of claims 1-4 and 12 is respectfully requested, and allowance of these claims is earnestly solicited.

Rejections under 35 USC §103(a)

Claim 5

Claim 5 is rejected under 35 USC §103(a) as being unpatentable over Inagaki et al. in view of Allen et al., US Patent No.: 6,497,179 (Allen et al., '179). This rejection is respectfully

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traversed for at least the reasons stated below.

The Examiner asserted that it would have obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Inagaki et al. to include a sensor located between a main feed roller (17) and a sub feed roller (15) as taught by Hashimoto et al., since Hashimoto et al. teaches to provide an efficient way of transporting sheets and further modify Inagaki et al. to include a paper sensor as taught by Allen et al., '179, since Allen et al., '179 teaches the use of the medium detector to provide an acceptable control signal to avoid damage to the printer.

Applicant respectfully points out that the Examiner fails to address the Applicant's main feed roller, sub feed roller, connecting conveyance path, and paper sensor disposed on the connecting conveyance path and between the main feed roller and the sub feed roller as recited in claims 1, 2, 3, and 5, respectively. Furthermore, it is respectfully submitted that Inagaki et al. does not disclose the Applicant's third paper feeding path and sub feed roller. Moreover, it is also respectfully submitted that the roller (17) of Hashimoto et al. (Hashimoto et al., U.S. Patent No. 6,445,903) is not the same as Applicant's main feed roller along which the paper feeding paths are disposed, but is limited to a roller disposed on a sheet feeding passage 12 on a downstream side (an exit) of an image forming means (6, 7, 8, and 9) so that a printed medium is discharged from an image forming means (6, 7, 8, 9), and the roller (15) of Hashimoto et al. (Hashimoto et al., U.S. Patent No. 6,445,903) is not the same as Applicant's sub feed roller disposed between the image forming unit and the main feed roller, but is limited to a roller disposed at an exit of the image forming means (6, 7, 8, 9).

Moreover, Allen et al., '179 fails to teach the Applicant's main feed roller, sub feed roller, and paper sensor disposed between the main feed roller and the sub feed roller to detect the printing medium disposed between the main feed roller and the sub feed roller which is also missing from the teachings of Inagaki et al. and Hashimoto et al. (Hashimoto et al., U.S. Patent No. 6,445,903) as stated above. Thus, none of the Inagaki et al., Allen et al., '179, or Hashimoto et al. (Hashimoto et al., U.S. Patent No. 6,445,903) patents teaches or suggests Applicant's main feed roller, connecting conveyance path, sub feed roller disposed on the connecting conveyance path, and paper sensor disposed between the main feed roller and the sub feed roller separately, or in any hypothetical combination thereof.

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Even assuming *arguendo* that it were proper to install the sensor of Allen et al., '179 in the rollers (17, 15) of Hashimoto et al. (Hashimoto et al., U.S. Patent No. 6,445,903) in an electrical recorder of Inagaki et al., the location of the sensor does not suggest a location of the Applicant's paper sensor with respect to the main feed roller and the sub feed roller. In fact, any hypothetical combination of these patents could only be limited to a sensor disposed on an exit of the image forming unit or between rollers which are not the same as the Applicant's main feed roller and sub feed roller.

Furthermore, any hypothetical combination or mere use of a sensor of Allen et al., '179 with the rollers (17, 15) of Hashimoto et al. (Hashimoto et al., U.S. Patent No. 6,445,903) and the printer of Inagaki et al. would not teach or suggest the Applicant's paper sensor to detect the printing medium disposed on the connecting conveyance path disposed between the main conveyance path and the main feed roller.

It is well established that all claim limitations must be taught or suggested in prior art reference according to MPEP 2143.03. Furthermore, all words in a claim must be considered in judging the patentability of that claim against the prior art according to *In re wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Since none of the patents by Allen et al., '179, Hashimoto et al. (Hashimoto et al., U.S. Patent No. 6,445,903), or Inagaki et al. teaches or suggests the Applicant's paper sensor as recited in claim 5, it is respectfully submitted that claim 5 is not obvious in view of Inagaki et al., Allen et al., '179 or Hashimoto et al. (Hashimoto et al., U.S. Patent No. 6,445,903) separately, or in any hypothetical combination thereof, withdrawal of the rejection of claim 5 is respectfully requested.

Claim 7

Claim 7 is rejected under 35 USC §103(a) as being unpatentable over Inagaki et al. in view of Hashimoto et al., U.S. Patent No. 6,445,903 (Hashimoto et al., '903). In this rejection, claim 7 seems to indicate original claim 6. The rejection is respectfully traversed.

The original claim 6 has been renumbered as claim 7 and amended to recite a first pinch roller and a second pinch roller rotating together with a main feed roller. It is submitted that any

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combination of Inagaki et al. and Hashimoto et al., '903 neither discloses nor suggests the Applicant's first and second pinch rollers. Since claim 7 is not obvious over or Inagaki et al. in view of Hashimoto et al., '903, claim 7 is deemed to be allowable. Therefore, withdrawal of the rejection of claim 7 is respectfully requested.

Claims 8-11

Claims 8-11 are rejected under 35 USC §103(a) as being unpatentable over Inagaki et al. in view of Takehasi et al., U.S. Patent No. 5,839,014 (Takehasi et al., '014). The rejection is respectfully traversed.

The Examiner asserted that Takehasi et al., '014 teaches a cassette conveyance path (30) from at least two paper-feeding cassettes and a tray conveyance path from a manual feed tray (75b) , and it would be obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Inagaki et al. to include two cassettes and a manual feed tray as taught by Takehasi et al., '014, since Takehasi et al., '014 uses the cassette and tray to provide a storage area for paper that is conveyed in the image apparatus, and also asserted that Takehasi et al., '014 teaches a return conveyance path (56).

Claims 8-11 have been amended to recite a first portion, a second portion, and a third portions of an outer circumference of a main feed roller along which the first, second, and third paper feeding paths are disposed, respectively.

However, neither Inagaki et al. nor Takehasi et al., '014 discloses the Applicant's three paper feeding paths disposed on three portions of the outer circumference of the main feed roller, respectively.

Even assuming *arguendo* that it were proper to combine a manual feed tray (75b) of Takehasi et al., '014 with the electrical recorder of Inagaki et al., that combination of Takehasi et al., '014 and Inagaki et al. would neither teach nor suggest the Applicant's third paper path disposed along the outer circumference of the main feed roller, nor would this combination teach or suggest the Applicant's first, second, and third portions of the outer circumference of the main feed roller.

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Since claims 8-11 are not obvious over Inagaki et al. in view of Takehasi et al., '014, claims 8-11 are deemed to be allowable. Therefore, withdrawal of the rejection of claims 8-11 is respectfully requested.

Claim 13

Claim 13 is rejected under 35 USC §103(a) as being unpatentable over Inagaki et al. in view of Hashimoto et al., '903 and Takehasi et al., '014. The rejection is respectfully traversed.

The Examiner asserted that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Inagaki et al. to include the pinch rollers as taught by Hashimoto et al., '903 since Hashimoto et al., '903 provides a tight connection with the drive roller for the purpose of preventing bent sheets and poor print quality and to include the cassettes and tray to temporarily stack the paper in order for the paper to be printed on both sides while conveying through the imaging apparatus.

Claim 13 has been amended to recite first, second, third, fourth paper feeding paths disposed on first, second, third, and fourth portions of the outer circumference of the main feed roller.

Applicant respectfully submits that none of the Inagaki et al., Hashimoto et al., '903, and Takehasi et al., '014 patents teaches or suggests the Applicant's four paper feeding paths disposed along four portions of the outer circumference of the main feed roller as recited. Moreover, any combination of Inagaki et al. and Hashimoto et al., '903 and Takehasi et al., '014 would not teach or suggest the four paper feeding paths disposed along four portions of the outer circumference of the main feed roller as recited in claim 13.

Again, all claim limitations must be taught and suggested in prior art reference according to MPEP 2143.03. Inagaki et al., Hashimoto et al., '903, and Takehasi et al., '014 neither teach nor suggest the Applicant's four portions of the outer circumference of the main feed roller to correspond to the four paper feeding paths.

In view of the above points, it is respectfully submitted that since claim 13 is not obvious over Inagaki et al. or Hashimoto et al., '903 or Takehasi et al., '014 or any hypothetical

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combination thereof, claim 13 is deemed to be allowable. Therefore, withdrawal of the rejection of claim 13 is respectfully requested and allowance thereof is earnestly solicited.

Claims 14-16, 18, and 20-24

Claims 14-16, 18, and 20-24 are rejected under 35 USC §103(a) as being unpatentable over Inagaki et al. in view of Takehasi et al., '014. This rejection is respectfully traversed for at least the reasons stated below.

Claim 14 has been amended to recite at least three portions of an outer circumference of the main feed roller to correspond to at least three feeding paths.

Although Inagaki et al. and Takehasi et al., '014 disclose paper feeding paths (38, 68) and a path for a paper-feeding tray (75b), respectively, none of Inagaki et al. and Takehasi et al., '014 teaches the Applicant's three paper paths disposed on three portions of the outer circumference of the main feed roller as recited in claim 14.

Even assuming *arguendo* that it were proper to combine a path for a paper-feeding tray (75b) of Takehasi et al., '014 with the paper feeding paths (38, 68) of Inagaki et al., the combination of Takehasi et al., '014 and Inagaki et al. would not suggest the Applicant's three paper feeding paths disposed along the outer circumference of the main feed roller nor teach the Applicant's three portions of the outer circumference of the main feed roller to correspond to the three paper feeding paths as recited in claim 14.

Since claim 14 is not obvious over Inagaki et al. in view of Takehasi et al., '014, claim 14 is deemed to be allowable. Claims 15-16, 18, and 20-24 are deemed to be allowable at least due to their dependency and the allowable claim 14. Therefore, withdrawal of the rejection of claims 14-16, 18, and 20-24 is respectfully requested and allowance thereof is earnestly solicited.

Claim 17

Claim 17 is rejected under 35 USC §103(a) as being unpatentable over Inagaki et al. in view of Takehasi et al., '014 as applied to claim 14 and further in view of Allen et al., '179. The

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rejection is respectfully traversed.

The Examiner asserted that it would have been obvious at time the invention was made to a person having ordinary skill in the art to modify the invention taught by Inagaki et al. to include a sensor located between a main feed roller and a sub feed roller as taught by Hashimoto et al., '903, since Hashimoto et al., '903 teaches to provide an efficient way of transporting sheets and further modify Inagaki et al. to include a paper sensor as taught by Allen et al., '179, since Allen et al., '179 teaches the use of the medium detector to provide an acceptable control signal to avoid damage to the printer.

It is respectfully submitted that the rollers (15, 17) of Hashimoto et al., '903 are disposed on a sheet feeding passage 12 on a downstream side (an exit) of an image forming means (6, 7, 8, and 9) or on a return path of the image forming means (6, 7, 8, and 9) to selectively pull out a paper from the image forming means (6, 7, 8, and 9).

In contrast, the Applicant's main feed roller and sub feed roller are disposed between the paper feeding path and the main feeding path to feed the printing medium toward the image forming unit.

Moreover, none of Inagaki et al., Takehasi et al., '014, and Allen et al., '179 discloses the Applicant's three portions of the outer circumference of the main feed roller, sub feed roller, and paper sensor disposed between the main feed roller and the sub feed roller.

Even assuming *arguendo* that it were proper to combine the medium detector of Allen et al., '179 with the rollers (15, 17) of Takehasi et al., '014 and the roller (34a) of Inagaki et al., the combination results in the medium detector installed in the exit of the image forming means or in a return path of the image forming means.

Since claim 17 is not obvious over Inagaki et al. in view of Takehasi et al., '014 and Allen et al., '179, claim 17 is deemed to be allowable. Therefore, withdrawal of the rejection of claim 17 is respectfully requested and allowance thereof is earnestly solicited.

Claim 19

Claim 19 is rejected under 35 USC §103(a) as being unpatentable over Inagaki et al. in

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view of Takehasi et al., '014 as applied to claim 14 and further in view of Hashimoto et al., '903. The rejection is respectfully traversed.

The Examiner asserted that it would have been obvious at time the invention was made to a person having ordinary skill in the art to modify the invention taught by Inagaki et al. to include at least one pinch roller in contact with the sub feed roller as taught by Hashimoto et al., '903, since Hashimoto et al., '903 teaches that such a modification would be beneficial for facilitating media movement.

Since none of Inagaki et al., Takehasi et al., '014, and Hashimoto et al., '903 discloses the applicant's three portions of the outer circumference of the main feed roller to correspond to three paper feeding paths, a combination of Inagaki et al., Takehasi et al., '014, and Hashimoto et al., '903 lacks the applicant's three portions of the outer circumference of the main feed roller to correspond to three paper feeding paths.

Since claim 19 is not obvious over Inagaki et al. in view of Takehasi et al., '014 and Hashimoto et al., '903, claim 19 is deemed to be allowable. Therefore, withdrawal of the rejection of claim 19 is respectfully requested and allowance thereof is earnestly solicited.

Conclusion

In view of foregoing amendments, arguments and remarks, all claims are deemed to be allowable and this application is believed to be in condition of allowance.

No fee has been incurred by this Amendment.

If any further fees are required in connection with the filing of this Amendment, please charge the same to our deposit account number 502827.


Should any questions remain unresolved, the Examiner is respectfully requested to telephone Applicant's attorney.

Respectfully submitted,

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